

Substitute for form 1449A-B

Complete if Known

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

(use as many sheets as necessary)

Application Number **09/618,579**
Filing Date **July 18, 2000**
First Named Inventor **Sergey A. Selifonov**
Group Art Unit **1631**
Examiner Name **Zhou, S**
Attorney Docket Number **02-028950US**

U.S. PATENT DOCUMENTS

Examiner Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appeal
		Number	Kind Code (if known)			
	AA	5,023,171		Ho et al.	06-11-1991	

FOREIGN PATENT DOCUMENTS

Examiner Initials	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
		Office	Number	Kind Code (if known)				
AB	WO	91/06643	A1	Majesty (Her) In Right of Canada	05-16-1991			
AC	WO	96/16073	A2	Terrapin Technologies, Inc.	05-30-1996			
AD	WO	96/16073	A3	Terrapin Technologies, Inc.	05-30-1996			

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T
AE		Dewey et al. (1998) "Non-equilibrium Thermodynamics of Molecular Evolution." <i>J. Theor Biol.</i> 193:593-599	
AF		Morchio et al. (1997) "Simulation of Protein Evolution: Evidence for a Non-linear Aminoacidic Substitution Rate." <i>Riv Biol</i> 83-94	

Examiner Signature	<i>S. Zhou</i>	Date Considered	1/22/03
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Form 1449 (Modified)	Atty Docket No. MXGNP001X3	Application No.: 09/618,579
Information Disclosure Statement By Applicant	Applicant: Selifonov et al.	
(Use Several Sheets if Necessary)	Filing Date July 18, 2002	Group 1631

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
<i>AB</i>	A1	6,125,331	9/26/00	Toh			
<i>AB</i>	A2	6,403,312	6/11/02	Bassit , et al			
	A3			Dahiyat			

Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
							Yes	No
<i>AB</i>	B1	WO00/47612	8/17/00	WIPO				
<i>AB</i>	B2	WO01/61344	8/23/01	WIPO				
<i>AB</i>	B3	WO00/42559	7/2/00	WIPO				
<i>AB</i>	B4	WO01/75767	10/11/01	WIPO				

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<i>AB</i>	C2	Su et al., "Coupling Backbone Flexibility and Amino Acid Sequence Selection in Protein Design," Protein Science, 6:1701-1707, (1997)
<i>AB</i>	C3	Voigt et al., "Computationally Focusing the Directed Evolution of Proteins," Journal of Cellular Biochemistry Supplement, 37:58-63 (2001)
<i>CA</i>	C4	Hellberg et al., "Minimum Analogue Peptide Sets (MAPS) for quantitative Structure-Activity Relationships," Int. J. Peptide Protein Res. 37:414-427 (1991)

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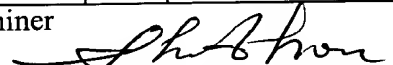
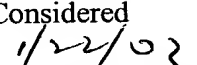
<i>A</i>	C5	Martin van Heel, "A New Family of Powerful Multivariate Statistical Sequence Analysis Techniques," J. Mol. Biol, 220:877-887 (1991)
	C6	Goldman et al., "Estimating Protein Function From Combinatorial Sequence Data Using Decision Algorithms and Neural Networks," Drug Dev. Research 33:125-132 (1994)
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	C8	Miyazawa et al., "Residue-Residue Potentials with a Favorable Contact Pair Term and an Unfavorable High Packing Density Term, for Simulation and Threading," J. Mol. Biol., 256:623-644 (1996)
	C9	Chao Zhang, "Extracting Contact Energies From Protein Structures: A Study Using a Simplified Model," Proteins: Structure, Function, and Genetics, 31:299-308 (1998)
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	C12	Moore et al., "Predicting Crossover Generation in DNS Shuffling," PNAS, Vol. 98, No. 6, 3226-3231 (2001)
	C13	Lehman et al., "Engineering Proteins for Thermostability: the Use of Sequence Alignments Versus Rational Design and Directed Evolution," Current Opinion in Biotechnology, 13:371-375 (2001)
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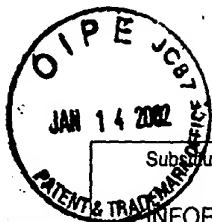


Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary)	Atty Docket No. MXGNP001X3 Applicant: Selifonov et al. Filing Date July 18, 2002	Application No.: 09/618,579 Group 1631
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<input checked="" type="checkbox"/>	C17	Jonsson, et al, "Quaintitative Sequence-Activity Modeils (QSAM)- Tool For Sequence Design", Nuclear Acid Research Vol. 21, No. 3, pp. 733-739 (1993)
<input type="checkbox"/>	C18	Sjostrom, et al, "Signal Peptide Amino Acid Sequences In <i>Escheruchua coli</i> Contain Information Related To Final Protein Localization. A Multivariate Data Analysis", The CMBO Journal vol. 6, no. 3, pp 823-831, (1987)
<input type="checkbox"/>	C19	Patel, et al, "Patenting Computer-Designed Peptides", Journal Of Computer-Acid Molecular Design 12 pp543-556, (1998)
<input type="checkbox"/>	C20	Schneider, et al, "Peptide Design by Artificial Neural Networks and Computer-Based Evolutionary Search", Proc. Natl. Acad. Sci. USA, vol. 95, pp. 12179-121184, October 1998
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<input type="checkbox"/>	C22	Bogarad, et al, "A Hierarchical Approach to Protein Molecular Evolution", Proc. Natl. Acad. Sci. USA, Vol. 96, pp. 2597-2595, March 1999
<input checked="" type="checkbox"/>	C23	Darius, et al, "Simulated Molecular Evolution" Or Computer-Generated Artifacts?", Biophysical Journal, Vol. 67, pp. 2120-2122, November 1994
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	Group Art Unit	1631
	Examiner Name	Zhou, S
	Attorney Docket Number	02-028950US

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A	AA	DIATCHENKO ET AL. (1996) "Suppression subtractive hybridization: A method for generating different regulated or tissue-specific cDNA probes and libraries." PNAS USA 93:6025-6030		
A	AB	SHAO ET AL. (1998) "Random-priming in vitro recombination: an effective tool for directed evolution." Nucleic Acids Research 26(2):681-683		

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Applicant: Selifonov et al.

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U.S. Patent Documents

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	A1						
	A2						
	A3						
	A4						
	A5						
	A6						
	A7						
	A8						

Foreign Patent or Published Foreign Patent Application

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	B1						Yes No
	B2						Yes No
	B3						Yes No
	B4						Yes No
	B5						Yes No

Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
	C1	Moore et al., <u>Modeling and Optimization of DNA Recombination</u>, Computer and Chemical Engineering 2000, Department of Chemical Engineering, The Pennsylvania State University, University Park © 2000
AB	C2	Gregory L. Moore, Costas D. Maranas, <u>Modeling DNA Mutation and Recombination for Directed Evolution Experiments</u> , Department of Chemical Engineering, The Pennsylvania State University, University Park, Received 28, October 1999, Accepted in revised form 15 April 2000 © 2000 Academic Press
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